

cyclin A (AT10.2): sc-53227

BACKGROUND

The critical role that the family of regulatory proteins known as cyclins play in eukaryotic cell cycle regulation is well established. The best-characterized cyclin complex is the mitotic cyclin B/Cdc2 p34 kinase, the active component of maturing promoting factor. Cyclin A accumulates prior to cyclin B in the cell cycle, appears to be involved in control of S phase and has been shown to associate with cyclin-dependent kinase-2 (Cdk2). In addition, cyclin A has been implicated in cell transformation and is found in complexes with E1A, transcription factors DRTF1 and E2F and retinoblastoma protein, p110. A second form of cyclin A, named cyclin A1 because of its high sequence homology to *Xenopus* cyclin A1, is most highly expressed in germ cells. It has been proposed that cyclin A1 can associate with Cdk2, p39 and Cdc2 p34.

CHROMOSOMAL LOCATION

Genetic locus: CCNA2 (human) mapping to 4q27; Ccna2 (mouse) mapping to 3 B.

SOURCE

cyclin A (AT10.2) is a mouse monoclonal antibody raised against recombinant cyclin A of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

cyclin A (AT10.2) is recommended for detection of cyclin A of mouse, rat and human origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for cyclin A siRNA (h): sc-29282, cyclin A siRNA (m): sc-29283, cyclin A shRNA Plasmid (h): sc-29282-SH, cyclin A shRNA Plasmid (m): sc-29283-SH, cyclin A shRNA (h) Lentiviral Particles: sc-29282-V and cyclin A shRNA (m) Lentiviral Particles: sc-29283-V.

Molecular Weight of cyclin A: 54 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, F9 cell lysate: sc-2245 or HuT 78 whole cell lysate: sc-2208.

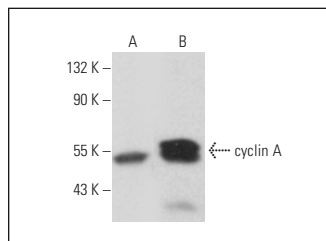
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 3) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

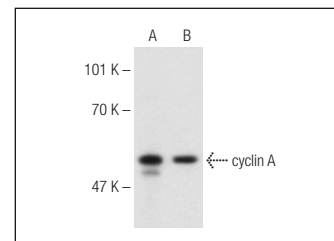
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



cyclin A (AT10.2): sc-53227. Western blot analysis of cyclin A expression in F9 (A) and K-562 (B) whole cell lysates.




cyclin A (AT10.2): sc-53227. Western blot analysis of cyclin A expression in K-562 (A) and HuT 78 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Zhang, A.T., et al. 2011. Dynamic interaction of Y RNAs with chromatin and initiation proteins during human DNA replication. *J. Cell Sci.* 124: 2058-2069.
- Ma, X., et al. 2015. Therapeutic delivery of cyclin-A2 via recombinant adeno-associated virus serotype 9 restarts the myocardial cell cycle: an *in vitro* study. *Mol. Med. Rep.* 11: 3652-3658.
- Cao, W., et al. 2017. Synergistic cardioprotective effects of rAAV9-cyclin A2 combined with fibrin glue in rats after myocardial infarction. *J. Mol. Histol.* 48: 275-283.
- Gong, L., et al. 2018. Astragaloside IV protects rat cardiomyocytes from hypoxia-induced injury by down-regulation of miR-23a and miR-92a. *Cell. Physiol. Biochem.* 49: 2240-2253.
- Becker, J.R., et al. 2018. The ASCIZ-DYNLL1 axis promotes 53BP1-dependent non-homologous end joining and PARP inhibitor sensitivity. *Nat. Commun.* 9: 5406.
- Roci, I., et al. 2019. Mapping metabolic events in the cancer cell cycle reveals arginine catabolism in the committed SG2M phase. *Cell Rep.* 26: 1691-1700.
- Chew, N.J., et al. 2020. FGFR3 signaling and function in triple negative breast cancer. *Cell Commun. Signal.* 18: 13.
- Pennycook, B.R., et al. 2020. E2F-dependent transcription determines replication capacity and S phase length. *Nat. Commun.* 11: 3503.

RESEARCH USE

For research use only, not for use in diagnostic procedures.



See **cyclin A (B-8): sc-271682** for cyclin A antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.